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EVENSON MCKEOWN EDWARDS & LENAHA
1200 G STREET NW
SUITE 700
WASHINGTON DC 20005-3814

EXAMINER

JIMENEZ, M
ART UNIT PAPER NUMBER

3726
DATE MAILED: 05/10/01

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/962,776

Applicant(s)

Schertler

Examiner

Marc Jimenez

Art Unit

3726



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 23, 2000
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on Oct 23, 2000 is: a) ☐ approved b) ☒ disapproved.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

Art Unit: 3726

DETAILED ACTION

Supplemental Declaration

1. In view of the amendments in Paper #17, a supplemental declaration complying with 37 CFR 1.175(b) is required. It is noted that there are defects in the supplemental declaration filed 10/23/2000, for example "Claims 30-3" in the third paragraph is incorrect.

Original Patent

2. Although assignee has agreed to surrender the original patent, the assignee must also file a certificate under 37 C.F.R. 3.73(b).

Preliminary Amendment

3. The preliminary amendment filed 11/3/1997 is improper because the requested change to the specification was not underlined (see page 2, section 9 of the preliminary amendment filed 11/3/1997). A new amendment showing the changes to the specification underlined is required in response to this office action.

Reissue Applications

4. Claims 1-57 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

Art Unit: 3726

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

5. The rejection to Claims 1-34 under 35 U.S.C. 251 in the prior office action (paper #16) is herein withdrawn. It is noted that the limitation “projecting from” omitted in the instant reissue application was not originally argued in the original application to make the application claims allowable over a rejection or objection (this limitation was actually rejected under a prior art reference to Claim 8 of the original application). The limitations in Claim 9 was the basis for overcoming the prior art reference. MPEP 1412.02.

Drawings

6. The proposed drawing correction filed on 10/23/2000 has been disapproved because it is not in the form of a pen-and-ink sketch showing changes in red ink or with the changes otherwise highlighted. See MPEP § 608.02(v). Also, the drawing figure(s) being amended must be labeled “amended”.

Claim Objections

7. **Claim 30** is objected to because of the following informalities: in line 18: “form” should be --for--. Appropriate correction is required.

Art Unit: 3726

Claim Rejections - 35 U.S.C. § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claim 27** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites “said holding means” in lines 1-2 and “said pin” in line 3 which lack proper antecedent basis.

Claim Rejections - 35 U.S.C. § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 1-11, 15-24, 28, 31-40, and 45-57** are rejected under 35 U.S.C. 102(b) as being anticipated by DE 24 54 544 [‘544].

With respect to **Claim 1**, [‘544] teach the following in *Fig. 1*: a vacuum process apparatus for processing at least one workpiece comprising a chamber **2** with at least two

Art Unit: 3726

openings **15 and 16** defining respective opening areas; and a transport device **3** having a drive shaft **4** rotatable around a rotational axis (see arrow close to **4**) of the drive shaft **4**; at least two conveyors **9 and 5** for at least one workpiece each, and a transport arm **23** for each conveyor **9 and 5** operatively associated with the drive shaft **4**; the arms **23** being operatively coupled to the conveyors **9 and 5** to move the conveyors **9 and 5** independently of each other relative to the drive shaft **4** and to have at least a radial movement component relative to the drive shaft **4** rotational axis (see arrow close to **4**) via encapsulated, independent drives **24** the drives **24** controlling closing and opening of the openings **15 and 16** with movement of the conveyors **9 and 5** relative to the drive shaft **4**.

With respect to **Claims 3 and 18**, [’544] teach that the conveyors **9 and 5** are moveable at least parallel to the drive shaft **4**.

With respect to **Claims 4 and 19**, [’544] teach that the conveyors **9 and 5**, once positioned adjacent one of the openings **15 and 16** by rotation of the transport device **4**, are movable towards and from (see arrows close to **24**) the opening **15 and 16** in a normal direction of the opening areas **15 and 16**.

With respect to **Claims 5 and 20**, [’544] teach that rotation of the transport device **3** around the rotational axis substantially define a cone shaped trajectory surface with a cone opening angle with respect to the rotational axis of not more than 90 degrees.

Art Unit: 3726

With respect to **Claim 8**, [’544] teach that the transport device **3** residing within the chamber **2** further comprises a station **26** for treating the workpiece communicating by one of the openings **16** within the chamber **2**.

With respect to **Claim 9**, [’544] teach a gas inlet means **22** and pumping means **21** at least at one of the station **26** and chambers **2**.

With respect to **Claims 10 and 23**, [’544] teach that at least one of the conveyors **9 and 5** comprise a seal member **9** for sealingly closing one of the openings **15 and 16** when the at least one conveyor **9 and 5** is rotated adjacent to the opening **15 and 16** by the transport device **3**.

With respect to **Claims 11 and 24**, [’544] teach that the seal member is formed by a conveyor plate **9** for the workpiece.

With respect to **Claims 15 and 28**, note that the workpiece being a compact disk or magneto-optical storage disk workpieces does not further limit the structure of the claimed apparatus and therefore lends no patentable weight to the apparatus claimed.

With respect to **Claim 16**, [’544] teach the following in *Fig. 1*: a vacuum chamber **2** for processing at least one workpiece, comprising at least two openings **15 and 16** defining respective opening areas; a transport device **3** with a drive shaft **4** for rotating the transport device **3** around a rotational axis (see arrow close to **4**) of the drive shaft **4**; at least two conveyors **9 and 5**, and a transport arm **23** for each conveyor **9 and 5** operatively associated with the drive shaft **4** and each **24** being operatively coupled to one of the conveyors **9 and 5** to move the conveyors **9 and 5** independently of each other relative to the drive shaft **4**, the transport arms **23** having at

Art Unit: 3726

least a radial movement component relative to the drive shaft **4** rotational axis via encapsulated independent drives **24**.

With respect to **Claim 31**, [’544] teach the following in *Fig. 1*: a vacuum chamber **2** with at least two openings **15 and 16** and a workpiece transport arrangement **3** with which at least one workpiece within the chamber **2** is selectively brought into a position adjacent to one of the openings **15 and 16**, whereby the transport arrangement **3** is provided within the chamber **2** rotatably around a rotational axis (see arrow next to **4**) and carries at least two members **9 and 5** for holding a workpiece each, a rotation drive **4** is provided to rotate the workpiece transport arrangement **3**, and at least two displacement drives **24** are provided for displacing (see arrows) the at least one workpiece each with respect to the transport arrangement **3** whereby the members **9 and 5** are selectively brought into a position aligned with one of the openings **15 and 16** by rotation of the transport arrangement **3** and from such position a workpiece is displaceable (see arrows close to **24**) towards and from the opening by one of the displacement drives **24** in a direction with a radial component relative to the rotational axis (see arrow next to **4**), and the displacement drives **24** are operable independently of each other.

With respect to **Claim 32**, [’544] teach the following in *Fig. 1*: a vacuum chamber **2** comprising at least two openings **15 and 16** defining respective opening areas; and a transport device **3** operatively arranged relative to the at least two openings **15 and 16** and including a member **4** movable relative to a rotational axis (see arrows close to **24**) thereof, at least two conveyors **9 and 5** for transporting at least one workpiece each, and at least one linear drive **24**

Art Unit: 3726

for each of the at least two conveyors **9 and 5** being operatively coupled between the movable member **4** and a respective conveyor **9 and 5** of the at least two conveyors **9 and 5** and configured to linearly (see arrows close to **24**) move the respective conveyors **9 and 5** relative to the movable member **4** independently from other conveyors **9 and 5** of the at least two conveyors **9 and 5**, the at least one linear drives **24** being arranged to control closing and opening of the at least two openings **15 and 16**.

With respect to **Claim 33**, [’544] teach the following in *Fig. 1*: a vacuum chamber **2** comprising at least two openings **15 and 16** and a workpiece transport arrangement **3** with which at least one workpiece within the chamber **2** is selectively brought into a position adjacent to one of the openings **15 and 16**, whereby the transport arrangement **3** is provided within the chamber **2** rotatably around a rotational axis (see arrow close to **4**) and carries at least one member **9 and 5** for holding a workpiece, a rotation drive **4** is provided to rotate the workpiece transport arrangement **3**, and a sealed displacement drive **24** is arranged between the transport arrangement **3** and the at least one member **9 and 5** for displacing (see arrows close to **24**) a workpiece with respect to the transport arrangement **3**, whereby the member **9 and 5** is selectively brought into a position aligned with one of the openings **15 and 16** by rotation of the transport arrangement **3** and from such position a workpiece is displaceable towards and from (see arrows close to **24**) the opening **15 and 16** by the displacement drive **24**, and the member **9 and 5** and the displacement drive **24** are operatively mounted relative to the transport arrangement **3** rotation drive **4**, the

Art Unit: 3726

displacement drive **24** being further arranged to control opening and closing (see arrows close to **24**) of the opening **15 and 16**.

With respect to **Claim 34**, ['544] teach the following in *Fig. 1*: a method of processing at least one workpiece comprising the steps of rotating a transport device member **3** around a rotational axis (see arrow close to **4**) to bring the at least one workpiece adjacent an opening **15 or 16** in a vacuum chamber **2** having at least two openings **15 and 16**, and moving at least two conveyors **9 and 5** with at least one movement component **24** radial relative to the rotational axis (see arrow close to **4**), independently of each other relative to the transport device member **3** so as selectively to move the at least one workpiece towards and away (see arrows close to **24**) from the adjacent opening **15 and 16** and thereby controlling opening and closing of the opening **15 and 16**.

With respect to **Claims 35, 38, 45, 49, and 53**, ['544] teach that the closing **15 and 16** is a sealing closing.

With respect to **Claim 36, 39, 46, 51, and 56**, ['544] teach that for processing at least one disk-shaped workpiece, the conveyors **9 and 5** are configured to hold at least one of the workpieces with a predetermined positioning of a disk plane thereof, and the drive shaft **4** arranged to move the conveyors **9 and 5** in a direction which is offset with respect to the disk plane.

With respect to **Claim 37, 40, 47, 52, and 57**, ['544] teach that the offset direction is perpendicular to the disk plane (see Fig. 2).

Art Unit: 3726

With respect to **Claim 48**, [’544] teach that the at least one linear drive **24** is encapsulated within the chamber **2**.

With respect to **Claim 50**, [’544] teach that the displacement drive **24** is a linear drive (see arrows close to **24**).

With respect to **Claim 54**, [’544] teach that the closing and opening is performed by the conveyors **9 and 5**.

With respect to **Claim 55**, [’544] teach that the moving of the conveyors **9 and 5** is in a linear direction (see arrows close to **24**).

Claim Rejections - 35 U.S.C. § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claims 30 and 41-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateishi et al. (4,675,096) in view of JP 3-109727 [’727].

Tateishi et al. teach the following in *Fig. 3-4*: a vacuum chamber **37** with at least two openings **33** and a workpiece transport arrangement **47** with which at least one workpiece within

Art Unit: 3726

the chamber **32** is selectively brought into a position adjacent to one of the openings **33**, the transport arrangement **47** rotatable around a rotational axis and carries at least two members **42** for holding a workpiece each (col. 4, line 35), a rotation drive **25** is provided to rotate the workpiece transport arrangement **47**, and at least two displacement drives **43** are provided for displacing the at least one workpiece each with respect to the transport arrangement **45** whereby the members **42** are selectively brought into a position aligned with one of the openings **33** by rotation of the transport arrangement **43** and from such position a workpiece is displaceable towards and from the opening **33** by one of the displacement drives **43**, and the displacement drive **43** being arranged to control closing and opening of respective ones of the at least two openings **33**.

Tateishi et al. teach the invention cited above with the exception of the transport arrangement being provided within the chamber and the displacement drives being operatively mounted on the transport arrangement rotation drive.

[’727] teach a transport arrangement **61** provided within a chamber **63** and displacement drives **60a** operatively mounted on the transport arrangement rotation drive **65**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Tateishi et al. with the transport arrangement within the chamber and the displacement drives operatively mounted on the transport arrangement rotation drive, in light of the teachings of [’727], in order to provide a transport arrangement that allows individual control of the conveyors.

Art Unit: 3726

Note that Tateishi et al. teach that the members **42** are arranged to perform the closing, the closing is a sealing closing, the members **42** are configured to hold at least one of the workpieces with a predetermined positioning of a disk plane thereof, and the at least one disk-shaped workpiece is arranged to be displaceable by the displacement drive **43** in a direction which is offset with respect to the disk plane, and the offset direction is perpendicular to the disk plane.

14. **Claims 12-14, 25-27, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over ['544] in view of Lavinsky et al. (5,126,992).

['544] teach the invention cited above with the exception of having a positioning pin for positioning a disk shaped workpiece with a central bore.

Lavinsky et al. teach a positioning pin **22** for positioning a disk shaped workpiece **12** with a central bore.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of ['544] with a positioning pin for positioning a disk shaped workpiece with a central bore, in light of the teachings of Lavinsky et al., in order to securely hold the substrate during processing operations.

15. **Claims 2 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over ['544].

Art Unit: 3726

If applicant argues that the [’544] does not teach the warped limitations, then it would have been obvious to one of ordinary skill in the art, at the time of the invention that the use of a warped opening is considered an obvious matter of design choice absent any showing of criticality.

Response to Arguments

16. Applicant's arguments with respect to **Claims 1-57** have been considered but are moot in view of the new ground(s) of rejection.

17. Applicant's arguments filed 10/23/2001 have been fully considered but they are not persuasive.

18. It is noted that the following limitations were added to Claim 1 that changes the scope of Claim 1 and therefore the new grounds of rejection of Claim 1: “said drives controlling closing and opening of said openings with movement of said conveyors relative to said drive shaft” in lines 32-36.

19. It is noted that the following limitations were added to Claim 16 that changes the scope of Claim 16 and therefore the new grounds of rejection of Claim 16: “said transport arms having at least a radial movement component relative to said drive shaft rotational axis via encapsulated independent drives.” in lines 24-28.

20. It is noted that the following limitations were added to Claim 30 that changes the scope of Claim 30 and therefore the new grounds of rejection of Claim 30: “said displacement drive

Art Unit: 3726

being arranged to control closing and opening of respective ones of said at least two openings.”
in lines 33-37.

21. It is noted that the following limitations were added to Claim 32 that changes the scope of Claim 32 and therefore the new grounds of rejection of Claim 32: “said at least one linear drives being arranged to control closing and opening of said at least two openings.” in lines 22-26.

22. It is noted that the following limitations were added to Claim 33 that changes the scope of Claim 33 and therefore the new grounds of rejection of Claim 33: “said displacement drive being further arranged to control opening and closing of said opening.” in lines 34-37.

23. It is noted that the following limitations were added to Claim 34 that changes the scope of Claim 34 and therefore the new grounds of rejection of Claim 34: “and thereby controlling opening and closing of said opening” in lines 20-22.

24. In response to applicant’s request for a full explanation of why the [’544] document anticipates the claimed invention, see the rejections above wherein each structural feature of the instant invention is addressed. Applicant requested that a review of the U.S. Patent No. 3,915,117 be conducted to determine what is taught by the [’544] reference. The rejections above address this.

25. It is noted that the prior office action established a prima facie case of anticipation and obviousness.

Art Unit: 3726

26. In response to this office action, applicant is requested to point out which claims, if any, correspond to the embodiment depicted in Fig. 9 in the instant application to give a clear and thorough understanding of the claimed invention.

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 3726

Contact Information

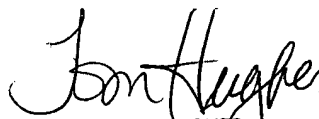
28. Official documents related to the instant application may be submitted to the Technology Center 3700 mail center by facsimile at (703) 305-3579/3580. Should Applicant desire to submit

a DRAFT response to the Examiner by facsimile transmission, then Applicant should contact the Examiner at the number below for instructions concerning the transmission of DRAFT documents. Applicant is reminded to clearly mark any facsimile transmissions as "DRAFT" if it is not to be considered as an official response.

29. Any inquiry concerning this communication should be directed to Examiner Marc Jimenez at telephone number (703) 306-5965.


MJ

May 3, 2001


S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700